IN THE SPECIFICATION

Please replace the heading on page 1, line 4 as follows:
~~Description~~BACKGROUND OF THE INVENTION

1. Field of the Invention

Please insert the following heading, after the paragraph on page 1, lines 6-8:

2. Background of the Invention

Please insert the following heading, before the paragraph on page 2, lines 4-11:

Summary of the Invention

Please delete the paragraph on page 2, lines 18-19.

Please replace the paragraph on page 2, lines 27-35 with the following:

The invention thus ensures that~~, particularly when using an apparatus for safe transmission of process signals which are detected redundantly for system safety, which apparatus has means for conversion of process signals, which are carried on two or more channels, to a single process signal which can be tapped off from one output channel,~~ there is a substantially smaller amount of data to be transmitted and consequently to be further processed, for the same overall information content, particularly when using an apparatus for safe transmission of process signals. The process

signals are detected redundantly for system safety. The apparatus has means for conversion of process signals to a single process signal. The process signals are carried on two or more channels. The single process signal can be tapped off from one output channel.

Please replace the paragraph on page 4, lines 9-16 with the following:

In order to further improve safety, the invention furthermore proposes that the transmission of the converted process signal be protected, in particular by means of a data protection value. The data protection value~~, which~~ is based on the useful content.~~, wherein,~~ I~~i~~n a further advantageous embodiment, the means for protection of the converted signal is designed for generation and attachment of at least one check bit that follows the useful content.

Please replace the paragraph on page 5, lines 3-10 with the following:

One advantageous development ~~furthermore~~ additionally provides that~~, in addition,~~ the process signal which is converted to a single channel for safe system processing is ~~also~~ converted once again to two or more process signals, which ~~in particular,~~ are carried via separate channels. S~~, in s~~ystem output assemblies ~~which~~ are and/or can be predetermined, such as system-specific actuators, drives or mechatronics units.

Please insert the following heading, after the paragraph on page 5, lines 3-10:

Brief Description of the Drawings

Please insert the following heading, after the paragraph on page 5, lines 20-21:

Detailed Description of the Preferred Embodiments

Please replace the paragraph on page 7, lines 9-12 with the following:

In particular, t~~T~~he conversion is preferably carried out to a digital signal S_1 ~~in particular~~ in order to ensure processor-supported further processing, at least virtually online, of the process signal S_1.

Please replace the paragraph on page 8, lines 15-27 with the following:

In practice, at least one check bit or one check sum is attached to the useful content for this purpose, by means of the input component 11. The safe input component 11 preferably comprises a means, for example an appropriately adapted shift register, for carrying out a CRC method. The CRC code to be generated is generated at an appropriately high level depending on the application and/or requirements specific to the safety system and relating to the protection respectively required, for example using a CRC-32 code. However, it should be mentioned that suitable

safety measures can also be carried out by other means which are known ~~per se~~ to the person skilled in the art~~,~~ in order ~~in particular,~~ to satisfy the IEC International Standard 61508.